

SeisComP3 Playback



Seismic Picker

- Add a new profile called “pick_local”, double click to open up to see options

bindings and binding profiles.

The screenshot displays the configuration window for a profile named "pick_local" within the "scautopick" application. The interface is divided into a main configuration area on the left and a file browser on the right.

Configuration Area (Left):

- global** (expanded):
 - scautopick** (expanded):
 - detecEnable** (checked): Enables/disables picking on a station.
 - detecFilter**: Defines the filter to be used for picking. Value: `>>BW(4,0.7,2)>>STALTA(2,80)"`
 - trigOn**: For which value on the filtered waveform is a pick detected. Value: `3`
 - trigOff**: The value the filtered waveform must reach to enable a ... Value: `1.5`
 - timeCorr**: The time correction applied to a detected pick. Value: `-0.8`
 - sensitivityCorrection** (unchecked): Defines whether the detector applies sensitivity ...

File Browser (Right):

- Shows a tree view of files and folders.
- The "pick_local" folder is selected and highlighted in orange.
- Other folders visible include: arlink, arlink-access, global, scautopick, scwfparam, seedlink, slarchive, and slmon.

Bottom Panel:

- Shows a preview of the selected "pick_local" profile.



Local Seismic Picker

➤ Change TIME_CORR to -0.1

The screenshot shows the Bindings configuration window. The left sidebar contains navigation options: Information, System, Inventory, Modules, Bindings, and Docs. The main area is titled "Bindings" and contains a table of configurations. A yellow banner at the top indicates "Configuration saved".

Name	Profile
Networks	
AF	
GRHM	
global	global_BHZ__
seedlink	slink_IRIS
scautopick	pick_local
POGA	
global	global_BHZ__
seedlink	slink_IRIS
scautopick	pick_local

The central configuration panel is for the "scautopick/pick_local" profile. It shows the following settings:

- global**
- scautopick**
 - detecEnable**: Enables/disables picking on a station. (locked)
 - detecFilter**: "RMHP(10)>>BW(4,0.8,5)>>STALTA(1,40)" (locked)
 - trigOn**: 3 (locked)
 - trigOff**: 1.5 (locked)
 - timeCorr**: -0.1 (locked)

The right sidebar shows a tree view of the configuration structure, with "pick_local" selected under "scautopick".



Regional Seismic Picker

Applications Places System alexander Wed Aug 23, 02:29

SeisComP3 - system configuration [/seiscomp3/etc]

Bindings

Configuration of module-station bindings and binding profiles.

Name	Profile
MS	
NE	
ON	
PS	
TA	
TC	
UO	
US	
VE	
WI	
XI	
Y	
YR	

scautopick/regional_pick

Defines the calibration function $\log(A_0)$ for computing ...

-1.0
Maximum epicentral distance for computing MLV. No ...

scautopick

- detecEnable**
Enables/disables picking on a station.
- detecFilter**
Defines the filter to be used for picking.
Value: `"RMHP(10)>>BW(4,1.0,10.0)>>STALTA(1,40)"`
- trigOn**
For which value on the filtered waveform is a pick detected.
Value: `3`
- trigOff**
The value the filtered waveform must reach to enable a pick.
Value: `1.5`
- timeCorr**
The time correction applied to a detected pick.
Value: `-0.1`
- sensitivityCorrection**
Defines whether the detector applies sensitivity correction.

Location
Evaluated
`RMHP(10)>>BW(4,1.0,10.0)>>STALTA(1,40)`

Name
HHZ
global_profile
global_profile~
scautopick
pick_profile
pick_BHZ~
pick_BH1~
regional_pick_mx
pick_profile~
local_pick_gempa
regional_pick
scwfparam

AK AT AU
BC C C1
CM G GE
II IM IU

[alexander@localhost:...] SeisComP3 - system C...

Additional Picker Options

- Set the Picker to use. AIC is good for

SeisComP3 - system configuration [/home/sysop/seiscomp3/etc]

Configuration / scautopick

Makes picks on waveforms.

Configuration saved

- Information
- System
- Inventory
- Modules
- Bindings
- Docs

- seedlink
- slarchive
- GUI
 - scsv
 - scmv
 - scolv
 - scqcv
 - scrttv
- Inventory
 - scinv
- Messaging
 - scmaster
- Processing
 - ew2sc3
 - scamp
 - scautoloc
 - scautopick**
 - scenvelope
 - scevent
 - scmag
 - scqc
 - screloc
 - scvsmag
 - scvsmaglog
 - scwfparam
- System

Defines the default filter used for picking. Station ...

leadTime The leadTime defines the time in seconds to start ...

initTime The initTime defines a timespan in seconds for that the ...

gapInterpolation Interpolate gaps linearly? This is valid for gaps ...

amplitudes Defines the amplitude types to be computed by the picker ...

picker To use. Evaluation (1 item) AIC

spicker Configures the secondary picker to use.

useAllStreams If enabled the all streams are used for picking that are ...

killPendingSPickers If enabled the all secondary pickers that were triggered ...

sendDetections If enabled and a :confval: 'picker' is configured then ...

thresholds

triggerOn triggerOff maxGapLength

Enable S Picker

File Edit

Configuration / scautopick

Makes picks on waveforms.

- Information
- System
- Inventory
- Modules
- Bindings
- Docs
- scinv
- ▼ Messaging
 - scmaster
- ▼ Processing
 - ew2sc3
 - istiMT
 - scamp
 - scautoloc
 - scautopick**
 - scenvelope
 - scevent
 - scmag
 - scqc
 - screloc
 - scvsmag
 - scvsmaglog
 - scwfparam
- ▼ System
 - diskmon
 - global
 - kernel
- ▼ Utilities
 - fdsnws
 - ql2sc
 - scalert
 - sddb
 - sddbstrip
 - scevtlog
 - scimex
 - scimort

global

scautopick

filter

>BW(4,0.7,2)>>STALTA(2,80)*

Defines the default filter used for picking. Station ...

timeCorrection

-0.8

Time correction applied for each pick made. Station ...

ringBufferSize

300

Defined the record ringbuffer size in seconds.

leadTime

30

The leadTime defines the time in seconds to start ...

initTime

30

The initTime defines a timespan in seconds for that the ...

gapInterpolation

Interpolate gaps linearly? This is valid for gaps ...

amplitudes

L_twc,mb,mb_cycles,Mwp_isti

Defines the amplitude types to be computed by the picker ...

picker

"AIC"

Configures the picker to use. By default only a simple ...

spicker

"S-L2"

Configures the secondary picker to use.

useAllStreams

If enabled the all streams are used for picking that are ...

killPendingSPickers

If enabled the all secondary pickers that were triggered ...

sendDetections

If enabled and a :confval: picker is configured then ...

thresholds

triggerOn

3

triggerOff

1.5

maxGapLength

4.5

amplMaxTimeWindow

3

Edit the lead and init times:

The screenshot shows the SeisComP3 system configuration interface. The window title is "SeisComP3 - system configuration [/seiscomp3/etc]". The user is "alexander" and the date is "Wed Aug 23, 02:18". The interface is titled "Configuration / scautopick" and has a subtitle "Makes picks on waveforms.". A left sidebar contains a tree view with categories: Information, System, Inventory, Modules, Bindings, and Docs. Under "System", the "scautopick" module is selected. The main area displays configuration options for "global" and "scautopick". Two fields are highlighted with red boxes: "leadTime" (value: 30) and "initTime" (value: 30). Other visible fields include "filter", "timeCorrection", "ringBufferSize", "amplitudes", "picker", "gapInterpolation", "useAllStreams", "killPendingSPickers", "sendDetections", "triggerOn", "triggerOff", "maxGapLength", and "amplMaxTimeWindow".

Configuration / scautopick
Makes picks on waveforms.

global

scautopick

filter [locked]
Defines the default filter used for picking. Station ...

timeCorrection [locked]
Time correction applied for each pick made. Station ...

ringBufferSize [locked]
Defined the record ringbuffer size in seconds.

leadTime [locked]
The leadTime defines the time in seconds to start ...

initTime [locked]
The initTime defines a timespan in seconds for that the ...

gapInterpolation [locked]
Interpolate gaps linearly? This is valid for gaps ...

amplitudes [locked]
Defines the amplitude types to be computed by the picker ...

picker [locked]
Configures the picker to use. By default only a simple ...

useAllStreams [locked]
If enabled the all streams are used for picking that are ...

killPendingSPickers [locked]
If enabled the all secondary pickers that were triggered ...

sendDetections [locked]
If enabled and a :confval: picker is configured then ...

thresholds

triggerOn [locked] **triggerOff** [locked] **maxGapLength** [locked] **amplMaxTimeWindow** [locked]

Add in 'saic' plugin in global configuration

The screenshot shows the SeisComP3 system configuration interface. The main window title is "SeisComP3 - system configuration [/seiscomp3/etc]". The left sidebar contains a navigation menu with categories: Information, System, Inventory, Modules, Bindings, and Docs. The "Modules" category is expanded, showing a tree view of configuration folders: scinv, Messaging, Processing, System, and Utilities. The "global" folder under "System" is selected. The main content area displays the "global" configuration page with the following fields:

- datacenterID**: ERT
- agencyID**: ERT
- organization**: ERT
- author**: (empty)
- plugins**: saic (highlighted with a red box)
- cityXML**: (empty)
- logging level**: 4 (highlighted with a red box)
- logging file**: file
- logging syslog**: syslog
- logging components**: (empty)
- logging component**: (empty)
- context**: context
- utc**: utc

The "plugins" field is highlighted with a red box, and the "logging level" field is also highlighted with a red box. The "plugins" field description reads: "Defines a list of modules loaded at startup." The "logging level" field description reads: "Sets the logging level between 1 and 4 where 1=ERROR, ...".

Additional Global Profile Local



SeisComP3 - system configuration [/home/sysop/seiscomp3/etc]

Bindings

Configuration of module-station bindings and binding profiles.

Name	Profile
Networks	
▼ AF	
▼ GRHM	
global	global_BHZ__
seedlink	slink_IRIS
scautopick	pick_local
▼ POGA	
global	global_BHZ__
seedlink	slink_IRIS
scautopick	pick_local

global/global_HHZ__

▼ **global**

detecStream

detecLocid

Evaluation (1 item)

- HHZ

▼ **MLh**

maxavg

ClippingThreshold

Name
arlink
arlink-access
▼ global
global_BHZ__
global_HHZ__
▼ scautopick
pick_local
scwfparam
▶ seedlink
slarchive
slmon

Seismic Picker

- automatic 2 level P and S picker AIC - from Switzerland, one by GFZ, STA/LTA. IRIS financed S picker
- AIC - Timestamp detection, configurable time window. better pick, fewer fake picks. better quality and exclude fake picks AIC.



Seismic Picker

- local BW (4,4,20)>>STALTA(0.2,10) [recommended that you have at least 50hz data]
- regional BW(4,1.0,10.0)>>STALTA(1,40)
- teleseismic BW(4,0.7,2)>>STALTA(2,80)

- In general, the more local you go, the more you can utilize higher frequencies
- The more local you go, the short the time window you want



Run These Modules

➤ *Processing:*

- scamp
- scautoloc
- scautopic
- scevent
- scmag

Core:

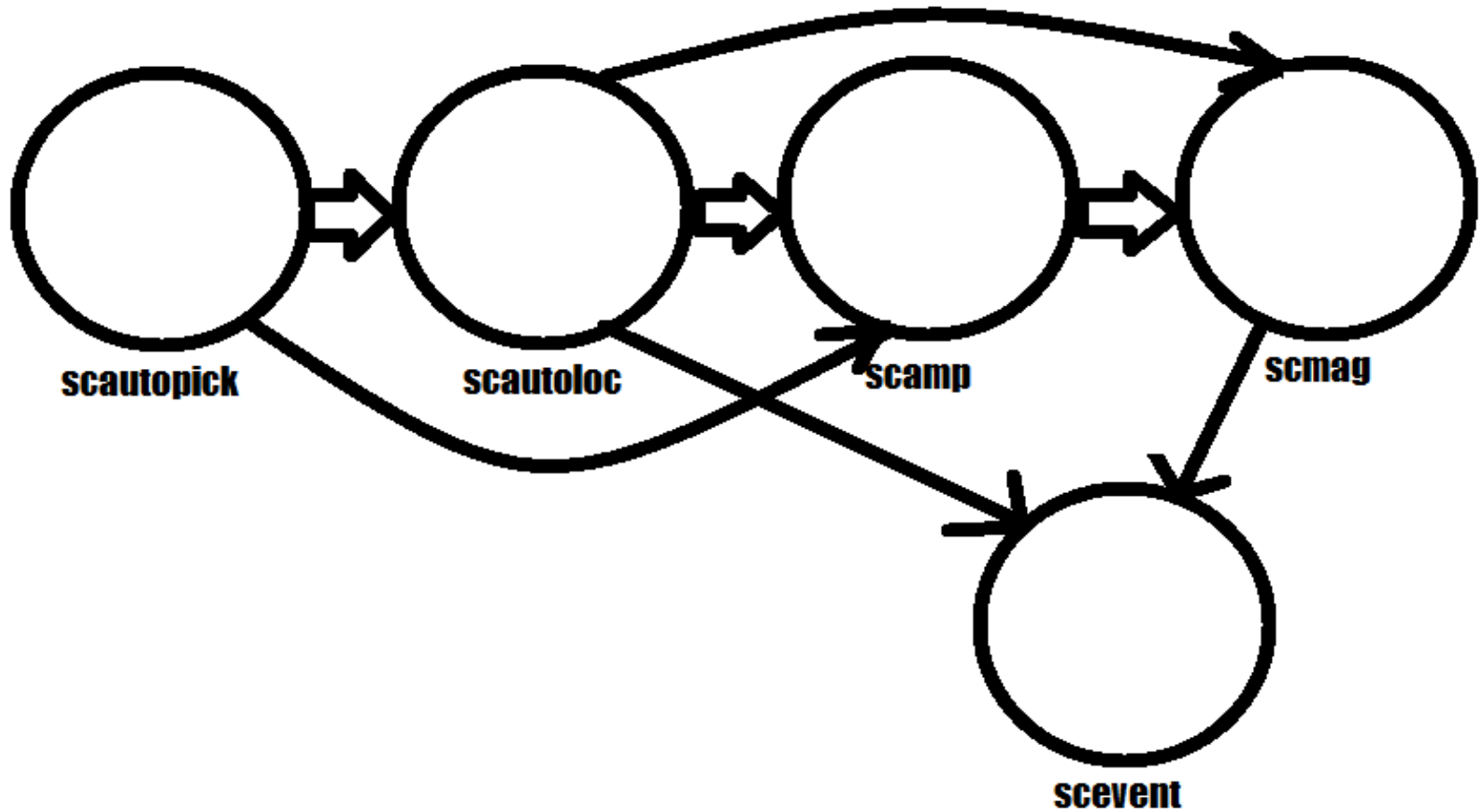
scmaster
spread

Acquisition:

seedlink
slarchive



Processing flow



Configuring scautoloc

The screenshot shows the SeisComP3 system configuration window for the 'scautoloc' module. The window title is 'SeisComP3 - system configuration [/seiscomp3/etc]'. The user is 'alexander' and the date is 'Wed Aug 23, 09:40'. The interface is divided into a left sidebar and a main configuration area.

Configuration / scautoloc
Locates seismic events.

global

scautoloc

locator

defaultDepth [km] 10 For each location, scautoloc performs checks to test if ...	minimumDepth [km] 5 The locator might converge at a depth of 0 or even ...
---	---

autoloc

maxRMS [s] 2.5 Max. permissible RMS for a location to be reported.	maxResidual [s] 5.0 Max. individual residual (unweighted) for a pick to be ...
maxSGAP [deg] 360 Max. secondary azimuth gap for an origin to be reported ...	maxStationDistance [deg] 180 Stations outside the maximum distance range are ignored.

Modules

- scsv
- scmv
- scolv
- scqcv
- scrttv
- Inventory
 - scinv
- Messaging
 - scmaster
- Processing
 - ew2sc3
 - istiMT
 - scamp
 - scautoloc**
 - scautopick
 - scenvelope
 - scevent
 - scmag
 - scqc
 - screloc
 - scvsmag
 - scvsmaglog
 - scwfparam
- System
 - diskmon
 - global
 - kernel
- Utilities
 - fdsnws
 - nl2sc

System

Bindings

Docs

sim_data - File Browser | alexander@localhost:~ | alexander@localhost:/... | SeisComP3 - system c...

Scautoloc config, cont

File Edit

Configuration / scautoloc

Locates seismic events.

- Information
- System
- Inventory
- Modules
- Bindings
- Docs

- scsv
- scmv
- scolv
- scqcv
- scrttv
- Inventory
 - scinv
- Messaging
 - scmaster
- Processing
 - ew2sc3
 - istiMT
 - scamp
 - scautoloc**
 - scautopick
 - scenvelope
 - scevent
 - scmag
 - scqc
 - screloc
 - scvsmag
 - scvsmaglog
 - scwfparam
- System
 - diskmon
 - global
 - kernel
- Utilities
 - fdsnws
 - nl2sc

minPhaseCount	<input type="text" value="5"/>	minStaCountIgnorePKP	<input type="text" value="30"/>
Minimum number of phases.		If the station count for stations at < 105 degrees ...	
cleanupInterval [s]	<input type="text" value="3600"/>	maxAge [s]	<input type="text" value="21600"/>
Clean-up interval for removing old/unused objects.		Max. age for objects kept in memory.	
wakeupInterval	<input type="text" value="5"/>	<input type="checkbox"/> adoptManualDepth	
Don't change.		If set to true, autoloc adopts a depth from a manual ...	
ampTypeAbs	<input type="text" value=""/>	ampTypeSNR	<input type="text" value="snr"/>
If this string is non-empty, an amplitude obtained from ...		If this string is non-empty, it is used to obtain a pick	
publicationIntervalTimeSlope [s/count]	<input type="text" value="0"/>	publicationIntervalTimeIntercept [s]	<input type="text" value="0"/>
Parameter "a" in the equation $t = aN + b$. t is the time ...		Parameter "b" in the equation $t = aN + b$. t is the time ...	
grid	<input type="text" value="@DATADIR@/scautoloc/grid.conf"/>	stationConfig	<input type="text" value="@DATADIR@/scautoloc/station.conf"/>
Location of autoloc grid file.		Location of autoloc stations config file.	

File Edit

Configuration / scautoloc

Locates seismic events.

- Information
- System
- Inventory
- Modules
 - scesv
 - scmv
 - scolv
 - scqcv
 - scrttv
 - Inventory
 - scinv
 - Messaging
 - scmaster
 - Processing
 - ew2sc3
 - istiMT
 - scamp
 - scautoloc**
 - scautopick
 - scenvelope
 - scevent
 - scmag
 - scqc
 - screloc
 - scvsmag
 - scvsmaglog
 - scwfparam
 - System
 - diskmon
 - global
 - kernel
 - Utilities
 - fdsnws
 - nl2sc
- Bindings
- Docs

Parameter "a" in the equation $t = aN + b$. t is the time ...

grid

Location of autoloc grid file.

pickLog

Location of autoloc stations config file.

Parameter "b" in the equation $t = aN + b$. t is the time ...

stationConfig

Location of autoloc stations config file.

useManualOrigins

If set to true, scautoloc will listen for manual ...

▼ locator

profile

The locator profile to use.

▼ xdl

enable

Arrivals with exceptionally large amplitudes may be ...

minAmplitude

minSNR

Grid.conf

Applications Places System alexander Wed Aug 23, 09:45

grid.conf (/seiscomp3/share/scautoloc) - GVIM

File Edit Tools Syntax Buffers Window Help



/s/s/s/grid.conf

```
1 90.00 0.00 33.0 4.00 180.0 6
2 -85.00 0.00 33.0 4.00 180.0 6
3 -85.00 60.00 33.0 4.00 180.0 6
4 -85.00 120.00 33.0 4.00 180.0 6
5 -85.00 180.00 33.0 4.00 180.0 6
6 -85.00 240.00 33.0 4.00 180.0 6
7 -85.00 300.00 33.0 4.00 180.0 6
8 -80.00 0.00 33.0 4.00 180.0 6
9 -80.00 27.69 33.0 4.00 180.0 6
10 -80.00 55.38 33.0 4.00 180.0 6
11 -80.00 83.08 33.0 4.00 180.0 6
12 -80.00 110.77 33.0 4.00 180.0 6
13 -80.00 138.46 33.0 4.00 180.0 6
14 -80.00 166.15 33.0 4.00 180.0 6
15 -80.00 193.85 33.0 4.00 180.0 6
16 -80.00 221.54 33.0 4.00 180.0 6
17 -80.00 249.23 33.0 4.00 180.0 6
18 -80.00 276.92 33.0 4.00 180.0 6
19 -80.00 304.62 33.0 4.00 180.0 6
20 -80.00 332.31 33.0 4.00 180.0 6
21 -75.00 0.00 33.0 4.00 180.0 6
22 -75.00 18.95 33.0 4.00 180.0 6
23 -75.00 37.89 33.0 4.00 180.0 6
24 -75.00 56.84 33.0 4.00 180.0 6
25 -75.00 75.79 33.0 4.00 180.0 6
26 -75.00 94.74 33.0 4.00 180.0 6
27 -75.00 113.68 33.0 4.00 180.0 6
28 -75.00 132.63 33.0 4.00 180.0 6
29 -75.00 151.58 33.0 4.00 180.0 6
30 -75.00 170.53 33.0 4.00 180.0 6
31 -75.00 189.47 33.0 4.00 180.0 6
32 -75.00 208.42 33.0 4.00 180.0 6
```

NORMAL /seiscomp3/share/scautoloc/grid.conf [unix] 0% ln 1: 1

[alexander@localhost:...] [alexander@localhost:...] [SeisComP3 - system ...] scautoloc - File Browser grid.conf (/seiscomp3/...

Station.conf

station.conf (/seiscomp3/share/scautoloc) - GVIM

```
1 * * 1 60
2 AD * 1 60
3 AF * 1 90
4 AU * 1 60
5 BE * 1 90
6 BS * 1 90
7 BW * 1 90
8 CH * 1 90
9 CK * 1 90
10 CN * 1 90
11 CR * 1 30
12 CU * 1 90
13 CX * 1 90
14 CZ DPC 1 90
15 CZ * 1 50
16 DK * 1 30
17 EB * 1 60
18 EE * 1 90
19 EI * 1 30
20 ES * 1 60
21 FN * 1 90
22 FR * 1 30
23 FN RNF 0 90
24 G * 1 180
25 GB * 1 90
26 GE * 1 180
27 GR * 1 60
28 GR GRA1 1 10
29 GR GRA2 1 10
30 GR GRA3 1 10
31 GR GRA4 1 10
32 GR GRB1 1 10
```

NORMAL /seiscomp3/share/scautoloc/station.conf [unix] 35% ln 32: 1

First Enable; then Start

SeisComP3 - system configuration [/home/sysop/seiscomp3/etc]

System

The current status of the system

Information

Update Start Stop Restart Check Enable module(s) Disable module(s) Update configuration

All commands (such as 'start', 'stop') will affect all modules which rows are currently selected. If no row is selected row selection with ESC.

Auto	Module	Status
On	spread	not running
On	scmaster	not running
On	seedlink	not running
On	scamp	not running
On	scautoloc	not running
On	scautopick	not running
On	scevent	not running
On	slarchive	not running
Off	fdsnws	not running
Off	diskmon	not running

Idle
\$ seiscomp enable slarchive
enabled slarchive

System
Inventory
Modules
Bindings
Docs

Running an event

- For this class, we will be primarily running 'canned' events from miniseed files
- Miniseed files are easy to come by and may be generated via request to IRIS (I prefer the Breqfast web tool here: <https://ds.iris.edu/ds/nodes/dmc/forms/breqfast-request/>)
- Generally, for playing back data on your own network, you'll want to have saved data via slarchive

